EXHIBIT A – Part 3

component of other Site investigations (i.e., groundwater, leachate, landfill and soil gas, surface water and sediment, property re-use and closure requirements).

- Perform a conventional feasibility study to identify and evaluate a full range of alternatives (other than the containment alternatives evaluated to address the direct contact risk in the Presumptive Remedy Area) for the appropriate extent of remedial action to meet remedial action objectives and to prevent or mitigate the migration or the release or threatened release of hazardous substances, pollutants, or contaminants from the Site.

- If the remedial investigation reveals contamination in specific, identifiable areas of concern which may present an imminent and substantial endangerment to human health or the environment (e.g., groundwater vapors to homes along East River Road), the Respondents may propose or U.S. EPA may require an interim response action to address the threat identified. The Respondents may propose, subject to U.S. EPA review, comment and approval, with modifications if necessary, interim response actions that, if implemented, will protect human health and the environment and may contribute to the effectiveness of the remedial action eventually selected for this Site.

When scoping the specific aspects of the project, the Respondents shall meet with U.S. EPA to discuss all project planning decisions and special concerns associated with the Site. The Respondents shall perform the following activities as a function of the project planning process.

1.1. Site Background (RI/FS Guidance Section 2.2)

The Respondents shall gather and analyze the existing Site background information and shall conduct a Site visit to assist in planning the scope of the RI/FS.

1.1.1 *Collect and Analyze Existing Data* (RI/FS Guidance Section 2.2.2)

Before planning the RI/FS activities, the Respondents shall thoroughly compile and review all existing Site data. Specifically, this includes presently available data relating to the varieties and quantities of hazardous substances at the Site, past disposal practices, the results of previous sampling activities, and U.S. EPA's air photo analysis of the Site. Existing information about the Site is available in the 1991 Screening Site Inspection Report, the 1995 Focused Site Inspection Prioritization, the 1996 Site Team Evaluation Prioritization Report, the 2000 Environmental Remediation Report at Valley Asphalt prepared by TCA Environmental, and additional information submitted to U.S. EPA by Site owners. The Respondents shall refer to Table 2-1 of the RI/FS Guidance for a comprehensive list of data collection information sources. The Respondents shall use this information to determine the additional data needed to characterize the site and evaluate risks, better define potential applicable or relevant and appropriate requirements (ARARs), and develop a range of preliminarily identified remedial

alternatives. The Respondents shall establish Data Quality Objectives (DQOs) subject to U.S. EPA approval which specify the usefulness of existing data. U.S. EPA will make all decisions on the necessary data and DQOs.

1.1.2 *Conduct Site Visit*

The Respondents shall visit the Site during the project scoping phase to develop a better understanding of the Site, and focus on the sources and the areas of contamination, as well as potential exposure pathways and receptors at the Site. During the Site visit, the Respondents shall observe, to the extent possible, the site's physiography, hydrology, geology, and demographics, as well as natural resource, ecological and cultural features. The Respondents shall use this information to better scope the project, to determine the extent of additional data necessary to characterize the Site, to evaluate risks, better define potential ARARs, and narrow the range of preliminarily identified remedial alternatives.

1.2 Project Planning (RI/FS Guidance Section 2.2)

Once the Respondents have collected and analyzed existing data and conducted a Site visit, the Respondents shall plan the specific project scope. Project planning activities include those tasks described below as well as identifying data needs, developing a work plan, designing a data collection program and a quality assurance plan, and identifying health and safety protocols. These tasks are described in Section 1.3 of this Task since they may result in the development of specific required deliverables.

1.2.1 *Identify Data Needs and Design a Data Collection Program* (RI/FS Guidance Sections 2.2.6, 2.2.7, 3.2.2, 3.2.3, 3.2.4 and 3.2.5)

The Respondents shall analyze the currently available data and information and prepare a site conceptual model. Based on the currently available data and information and the site conceptual model, the Respondents shall determine which areas of the Site and other nearby areas require additional data and/or evaluation to characterize site conditions, define the extent of hazardous substances or contaminants at the Site, support modeling efforts, evaluate risks to human health and the environment, and develop and evaluate remedial alternatives. (Two data gaps are that most of the existing groundwater monitoring wells are screened 5 to 10 or more feet below the water table, and vertical contaminant profiling was not conducted). The Respondents shall design a data collection program that includes, but is not limited to, the activities listed below. The Respondents shall develop the data collection program consistent with Sections 3.2.2, 3.2.3, 3.2.4 and 3.2.5 of the RI/FS Guidance; U.S. EPA's *Risk Assessment Guidance for Superfund (RAGS) Volume I - Human Health Evaluation Manual Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments* (Final, EPA 540-R-97-033, OSWER 9285.7-01D, December 2001); *Conducting Remedial Investigations/Feasibility Studies for CERCLA Municipal Landfill Sites* (EPA/540/P-91/001, February 1991); and any other applicable guidance. The

Respondents shall incorporate the sampling results into the Site Characterization Technical Memorandum (Task 3.1), the Remedial Investigation Report (Task 4), the Human Health and Ecological Risk Assessments (Tasks 3.2 and 3.3) and the Feasibility Study (Task 7). Where modeling or screening is appropriate, the Respondents shall identify such models or screening methods to U.S. EPA in the Planning Documents (Task 1.3) or in technical memoranda prior to their use. The Planning Documents or technical memoranda shall justify the basis and technical appropriateness for using the proposed model(s) or screening methods, and, for modeling efforts, shall include a detailed description of the data that is needed and that is either available or that the Respondents shall collect to support the modeling. The Respondents shall provide all modeling inputs and outputs to U.S. EPA with a sensitivity analysis. If requested, the Respondents shall also provide U.S. EPA with the programming used in the modeling, including any proprietary programs.

1.2.1.1 Waste Characterization

The RI shall include an investigation to characterize the waste materials at the Site outside the Presumptive Remedy Area, and to identify and characterize potential hot spots, including hot spots within the Presumptive Remedy Area as required by U.S. EPA based on the data collected during the RI or as needed to meet the objectives of this SOW. This shall include an analysis of current information and data on past disposal practices at the Site. For buried wastes, the Respondents shall use analytical methods and/or methods such as test pits, trenches and/or soil borings to determine the chemical composition of the waste, waste depths, thicknesses and volume; the elevation of the underlying natural soil layer; and the extent of cover over fill areas and hazardous substances or contaminants when such information is not already known. The RI shall also include geophysical characterization methods, such as ground penetrating radar, magnetometry or tomography to assist in finding and/or further delineating landfill limits and potential hot spot areas. In addition to the hazardous substances or contaminants characterization described above, the RI shall include leaching tests to address the potential leaching of constituents from the waste materials to the environment.

For the Presumptive Remedy Area (to address the direct contact risk), the Respondents shall conduct an investigation to determine the extent of the landfilled materials to be contained as part of the Presumptive Remedy, and shall complete a Site survey to establish the containment limits on a surveyed base map. U.S. EPA may also require the Respondents to characterize the landfill materials within the Presumptive Remedy Area as a component of other Site investigations (i.e., hot spot, groundwater, leachate, landfill and soil gas, surface water and sediment, property re-use and closure requirements).

1.2.1.2 Surface and Subsurface Soils Investigation

The RI shall include an investigation to determine the extent of hazardous substances or contaminants in surface and subsurface soils at the Site and to identify and characterize any hot spots. This includes areas where airborne hazardous substances or contaminants may have been deposited as a result of open burning or burning in the air curtain destructor. The RI shall include investigations to determine the leachability of Site hazardous substances or contaminants into the groundwater. The RI shall include the collection of background soil samples for use in determining whether any hazardous substances or contaminants detected in Site soil are related to local and/or regional background conditions. The surface and subsurface soil investigation may also include an assessment of activities on adjacent properties that may also have impacted soil and/or groundwater at the Site. The results of the assessment shall be used to define potential data gaps and the need for additional sampling and/or other data collection activities during the RI.

For the Presumptive Remedy Area (to address the direct contact risk), the Respondents shall conduct an investigation to determine the extent of the surface and subsurface soil to be contained as part of the Presumptive Remedy, and shall complete a Site survey to establish the containment limits on a surveyed base map. U.S. EPA may also require the Respondents to characterize surface and subsurface soil within the Presumptive Remedy Area as a component of other Site investigations (i.e., hot spot, groundwater, leachate, landfill and soil gas, surface water and sediment, property re-use and closure requirements).

1.2.1.3 Leachate Investigation

The RI shall include a leachate investigation to determine the locations where the highest seasonal water table intersects the waste material and whether there is leachate within the fill, even if the wastes are above the water table. The Respondents shall define surface water drainage patterns; calculate a water balance; determine soil, climate and waste characteristics; and determine the depth to groundwater and groundwater flow direction and velocity. The leachate investigation shall include the collection of direct soil solute samples (e.g., using lysimeters or other methods) for chemical analysis. The Respondents shall use the results of the leachate investigation to assist in identifying and characterizing any hot spots and to determine contaminant fate and transport.

1.2.1.4. Hydrogeologic Investigation

The RI shall include investigative tasks to determine the degree of groundwater hazards; the mobility and fate and transport of groundwater pollutants; discharge and recharge areas, including the influence of the Great Miami River on the groundwater flow regime; regional and local groundwater flow direction and quality; the local uses of groundwater including the number, location, depth, and use of nearby private and

municipal wells; and current and potential future impacts to any and all private and municipal wells from the Site and to surface water and sediment in the Great Miami River, the large water-filled gravel pit in the southwest area of the Site and any other surface water bodies on-Site or in locations potentially impacted by the Site. The Respondents shall develop a strategy to determine the horizontal and vertical distribution of hazardous substances or contaminants in the groundwater and the extent and fate and transport of any groundwater plume(s) containing hazardous substances or contaminants. The RI shall also include other hydraulic tests such as slug tests, pumping tests and grain size analyses to assist in evaluating contaminant fate and transport and in developing potential remediation options. The RI shall include upgradient (background) samples and, if directed by U.S. EPA, samples from private and municipal wells. Where modeling is appropriate, the Respondents shall identify such models to U.S. EPA in a technical memorandum prior to their use. The Respondents shall support any discussions or evaluations of monitored natural attenuation with data collected consistent with the methods and protocols in the U.S. EPA *Region 5 Framework for Monitored Natural Attenuation Decisions for Groundwater* (September 2000).

1.2.1.5 Surface Water, Sediment and Floodplain Investigation

The RI shall include an investigation to determine the impacts from the Site on surface water, sediments and the floodplain of the Great Miami River; surface water and sediments in the large water-filled gravel pit in the southwest area of the Site; surface water and sediments in the large depression area in the west-central area of the Site if water is present in this area at the time of sampling; and any other creeks and/or wetlands that are or may be impacted by the Site. The RI shall include the collection of background surface water, sediment and floodplain samples for use in determining whether any hazardous substances or contaminants detected in surface water, sediment or the floodplain are related to local and/or regional background conditions. The scope of the investigation of the sediment and floodplain of the Great Miami River (beyond the current Site boundary) shall be based upon an investigation of flood history at the Site and potential contaminant migration pathways to the floodplain and river through groundwater, surface water, overland flow and leachate.

1.2.1.6 Landfill/Soil Gas and Air Investigation

The RI shall include landfill/soil gas surveys for the areas on and around the fill areas of the Site and above areas where vapors may migrate from groundwater, including areas where homes are located (e.g., along East River Road east/south of the site). The RI shall also include an investigation to determine the extent of atmospheric hazardous substances or contaminants from the various potential source areas at the Site. The investigation shall determine subsurface migration patterns and address the tendency of the substances identified through the waste characterization and other media sampling to enter the atmosphere. The investigation shall determine local wind patterns; the explosive hazards; and the degree of hazard posed by the direct inhalation

of hazardous substances or contaminants in the air and through gas migration and vapor intrusion into structures (existing and future). The Respondents shall also use the results of the landfill/soil gas and air investigation to assist in identifying and characterizing any hot spots.

1.2.1.7 Ecological Investigation

The RI shall include an ecological investigation to assess the impact to aquatic and terrestrial ecosystems within and adjacent to the Site as a result of the disposal, release, and migration of hazardous substances or contaminants. These ecosystems include the Great Miami River and floodplain areas, the large water-filled gravel pit in the southwest area of the Site, and any other creeks and/or wetlands that are or may be impacted by the Site. The RI shall include a description of the habitats and the ecosystems affected; an evaluation of toxicity; an assessment of endpoint organisms; the exposure pathways; an evaluation of potential ecological risk; the relevant exposure pathways; and an assessment of ecological concerns. The RI shall also include additional field work (e.g., toxicity testing, biological surveys, bioaccumulation collections, etc.) needed to support the assessment. The Respondents shall conduct the ecological investigation and assessment in accordance with U.S. EPA guidance, including *Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments* (June 5, 1997; EPA 540-R-97-006).

The ecological investigation for direct contact with contaminated materials in the Presumptive Remedy Area may be conducted consistent with the Municipal Landfill Guidance and the Presumptive Remedy Guidance since unacceptable risks to human health in this area indicate that remedial action is warranted and, consistent with the guidance, the presumptive remedy in this area is containment (i.e., a landfill cap). The scope of the ecological investigation of the sediment and floodplain of the Great Miami River (beyond the current Site boundary) shall be based upon an investigation of flood history at the Site and potential contaminant migration pathways to the floodplain and river through groundwater, surface water, overland flow and leachate.

1.2.1.8 Geotechnical Investigation

The Respondents shall collect sufficient geotechnical information during the RI, including, but not limited to, slope stability analyses and soil physical properties, to assist in developing and evaluating remedial alternatives and property use and reuse options during the FS. The geotechnical investigation shall be completed in accordance with the Municipal Landfill Guidance and any other relevant U.S. EPA guidance.

1.2.2.9 Evaluate and Document the Need for Treatability Studies (RI/FS Guidance Section 2.2.4)

If the Respondents or U.S. EPA identify remedial actions that involve treatment, the Respondents shall conduct treatability studies unless the Respondents satisfactorily demonstrate to U.S. EPA that such studies are not needed. When treatability studies are needed, the Respondents shall plan initial treatability testing activities (such as research and study design) to occur concurrently with Site characterization activities (see Task 1.3.1 and Task 5).

1.2.2 *Refine and Document Preliminary Remedial Action Objectives and Alternatives and Begin Preliminary Identification of Potential ARARs (RI/FS Guidance Sections 2.2.3 and 2.2.5)*

Once the existing site information has been analyzed and the Respondents and U.S. EPA have developed an understanding of potential site risks, the Respondents shall review and, if necessary, refine the remedial action objectives that have been identified by U.S. EPA for each actually or potentially contaminated medium. The Respondents shall document the revised preliminary remedial action objectives in a Preliminary Remedial Action Objectives Technical Memorandum, subject to U.S. EPA approval. The Respondents shall submit the Preliminary Remedial Action Objectives Technical Memorandum within 30 days of the effective date of the ASAOC. The Respondents shall fully and satisfactorily address and incorporate U.S. EPA's comments on the Preliminary Remedial Action Objectives Technical Memorandum in the RI/FS Planning Documents (Task 1.3). The Respondents shall then identify a preliminary range of broadly defined potential remedial action alternatives and associated technologies relevant to the Site characteristics. The range of potential alternatives will encompass, where appropriate, alternatives in which treatment significantly reduces the toxicity, mobility, or volume of the waste; alternatives that involve containment with little or no treatment; and a no-action alternative.

The potential remedial action alternatives and technologies to address the direct contact risk with the landfill materials in the Presumptive Remedy Area shall be consistent with the Municipal Landfill Guidance and Presumptive Remedy Guidance.

1.2.3 *Begin Preliminary Identification of Potential ARARs (RI/FS Guidance Section 2.2.5)*

The Respondents shall conduct a preliminary identification of potential state and federal ARARs (chemical-specific, location-specific and action-specific) to assist in refining remedial action objectives and in the initial identification of remedial alternatives and ARARs associated with particular actions. ARAR identification will continue as Site conditions, contaminants, and remedial action alternatives are better defined.

1.3 RI/FS Planning Documents (RI/FS Guidance Section 2.3)

Within 60 calendar days of U.S. EPA's comments or approval of the Preliminary Remedial Action Objectives Technical Memorandum (Task 1.2.2), the Respondents shall submit draft RI/FS Planning Documents to U.S. EPA and Ohio EPA that address all data acquisition activities. The draft RI/FS Planning Documents shall include the draft RI/FS Work Plan (Task 1.3.1), a draft Sampling and Analysis Plan consisting of a draft Field Sampling Plan and a draft Quality Assurance Project Plan (Tasks 1.3.2, 1.3.2.1 and 1.3.2.2), and a draft Health and Safety Plan (Task 1.3.3). U.S. EPA will review and approve the RI/FS Planning Documents in consultation with Ohio EPA prior to the initiation of field activities. Following comment by U.S. EPA, the Respondents shall prepare final RI/FS Planning Documents which fully and satisfactorily address each of U.S. EPA's comments on the draft RI/FS Planning Documents. The final RI/FS Planning Documents shall include a response to comments explaining how each of U.S. EPA's comments on the draft RI/FS Planning Documents was addressed in the final RI/FS Planning Documents. The Respondents shall submit the final RI/FS Planning Documents to U.S. EPA and Ohio EPA within 30 calendar days of the receipt of U.S. EPA's comments on the draft RI/FS Planning Documents. The Respondents shall submit any subsequent revisions to any of the RI/FS Planning Documents, if required, to U.S. EPA and Ohio EPA within 21 calendar days of the receipt of U.S. EPA's comments on the final RI/FS Planning Documents. The Respondents shall not make any changes to the RI/FS Planning Documents that are not a direct result of addressing agency comments. The Respondents shall identify all revisions to the RI/FS Planning Documents in the response to comments. If the Respondents require additional time to respond to U.S. EPA's comments on the RI/FS Planning Documents, the Respondents shall provide U.S. EPA with a written request to extend the submission schedule for the RI/FS Planning Documents or for specific RI/FS Planning Documents. The Respondents' request shall discuss the specific causes of the delay, as well as the actions the Respondents are taking and plan to take to address the issues causing the delay. Based on the supporting information provided in the request U.S. EPA may grant up to a 30-day extension in the submission schedule.

Because of the unknown nature of the Site and the iterative nature of the RI/FS, additional data requirements and analyses may be identified throughout the process. The Respondents shall submit a technical memorandum documenting the need for additional data and identifying the DQOs whenever such requirements are identified. U.S. EPA may also require that the Respondents submit amendments to the RI/FS Work Plan and/or any of the other RI/FS Planning Documents to address additional data collection activities. In any event, the Respondents are responsible for fulfilling the additional data and analysis needs identified by U.S. EPA consistent with the general scope and objectives of this RI/FS.

1.3.1 *RI/FS Work Plan* (RI/FS Guidance Section 2.3.1 and Appendix B)

The Respondents shall submit a RI/FS Work Plan that documents the Site background, data evaluations and project planning completed during the scoping process (see Tasks 1.1 and 1.2). The Work Plan shall include a summary of the information collected during Task 1.1, including, but not limited to: Site location; description; physiography; hydrology; geology; demographics; ecological, cultural and natural resource features; a summary of the Site history; and a description of previous investigations and responses conducted at the Site by local, state, federal, or private parties. The Site background section shall discuss areas of waste handling and disposal activities based on U.S. EPA's 2002 air photo analysis of the Site and the 2000 Environmental Remediation Report at Valley Asphalt prepared by TCA Environmental, and overlay these areas on an air photo showing current Site conditions and the property lines for: 1) Valley Asphalt, 2) the property owned by Margaret Grillot and/or Katheryn Boesch and/or the South Dayton Dump Environmental Remediation Trust, 3) the property owned by the Miami Conservancy District (Lot 3274), 4) the property owned by Ronald Barnett (Lot 3252 and Lot 4610), and 5) the property owned by Jim City Salvage (Lot 3753 and Lot 4423) [or the current owner(s) of record]. The Site background section and air photo shall also discuss and show leased areas, nearby residences and buildings, the locations of existing groundwater monitoring wells and any other wells (e.g., well at Valley Asphalt), and previous surface water, sediment, and soil sampling locations. The Work Plan shall include a summary description of available data and identify areas where hazardous substances or contaminants were detected and the detected levels. This includes the data in the 1991 Screening Site Inspection Report, the 1995 Focused Site Inspection Prioritization, the 1996 Site Team Evaluation Prioritization Report, the 2000 Environmental Remediation Report at Valley Asphalt, and information submitted to the U.S. EPA by other Site owners. The RI/FS Work Plan shall include tables displaying the minimum and maximum levels of detected hazardous substances or contaminants in Site areas and media.

The RI/FS Work Plan shall include the preliminary objectives for the remedial action at the Site; preliminary potential state and federal ARARs (chemical-specific, location-specific and action-specific); a description of the Site management strategy developed by the Respondents and U.S. EPA during scoping; a preliminary identification of remedial alternatives; and data needs for fully characterizing the nature and extent of the contamination at the site, evaluating risks and developing and evaluating remedial alternatives consistent with the requirements of this SOW. The RI/FS Work Plan shall reflect coordination with treatability study requirements, if any (see Task 1.2.1.9 and Task 5). It shall also include a process for and manner of refining and/or identifying additional Federal and State ARARs, and for preparing the human health and ecological risk assessments and the feasibility study.

The RI/FS Work Plan shall include a detailed description of the tasks the Respondents shall perform, the information needed for each task, a detailed description of the information the Respondents shall produce during and at the conclusion of each task,

and a description of the work products that the Respondents shall submit to U.S. EPA and Ohio EPA. This includes the deliverables set forth in this SOW; a schedule for each of the required activities consistent with the RI/FS Guidance and other relevant guidance; and a project management plan including a data management plan (e.g., requirements for project management systems and software, minimum data requirements, data format and backup data management), monthly reports to U.S. EPA and Ohio EPA, and meetings and presentations to U.S. EPA and Ohio EPA at the conclusion of each major phase of the RI/FS. The Respondents shall refer to Appendix B of the RI/FS Guidance for a comprehensive description of the required contents of the RI/FS Work Plan.

1.3.1.1 Phased RI

The Respondents have proposed and U.S. EPA has agreed to a phased RI. The Phased RI shall meet all the objectives and requirements for conducting the RI provided in this SOW. The objective is to complete all field work for the Phased RI within 3 phases of field work and to have the Respondents submit the Site Characterization Technical Memorandum (Task 3.1) to U.S. EPA and OEPA within 270 calendar days (excluding days for U.S. EPA review) of U.S. EPA's approval of the RI/FS Work Plan and the Sampling and Analysis Plan including the Field Sampling Plan and the Quality Assurance Project Plan (Task 1.3.1, 1.3.2, 1.3.2.1 and 1.3.2.2). The actual number of phases of work conducted during the Phased RI and the amount of time needed to conduct any additional phases of work will depend on the findings of the previous phases of work and the conditions encountered during field work. The Respondents shall conduct the Phased RI in accordance with the schedule(s) in the U.S. EPA approved RI Planning Documents and Phased RI Planning Documents.

In the phased approach, the data collected during each phase of work shall be evaluated and used to assist in defining data gaps and developing investigative activities for the subsequent phase(s) of work. The RI/FS Work Plan shall include a detailed discussion of the specific RI/FS tasks planned for each phase, as well as a discussion of how the data collected during each phase will meet the objectives of that phase and be used to determine data gaps and work needed for each subsequent phase; and how this information will be presented to U.S. EPA for review and approval (e.g., Technical Memoranda, Phase 2 Work Plan/Sampling and Analysis Plan, Quality Assurance Project Plan, etc.).

When the Respondents believe that all the field work to complete the RI/FS has been satisfactorily completed and do not anticipate that any additional field work is necessary at that time, the Respondents shall submit, in the last Technical Memorandum for the Phased RI, a detailed explanation and justification to U.S. EPA for approval, in consultation with OEPA, explaining why the Respondents do not anticipate that any additional field work is necessary to complete the RI/FS at that time. In determining whether the Respondents may conclude field work or whether additional field work is needed, U.S. EPA will consider Site-related data and the objectives of the RI/FS and

this SOW. If U.S. EPA determines that additional field work is needed, the Respondents shall proceed with a subsequent phase of field work.

The field work for Phase 1 of the RI shall include those elements identified in Table 1.

Within 30 days of the completion of each phase of field work, the Respondents shall submit a draft Technical Memorandum documenting that phase of work and draft Phased RI/FS Planning Documents for the subsequent phase of field work (if required) to U.S. EPA and Ohio EPA for review and approval. The draft Technical Memorandum and subsequent Phase RI/FS Planning Documents shall include a clear and thorough presentation and analysis of all data collection activities from the previous phase of work and all planned data collection activities for the subsequent phase of work (if needed). U.S. EPA will review and approve the Technical Memorandum and the subsequent Phased RI/FS Planning Documents in consultation with Ohio EPA prior to the initiation or conclusion of field activities. Following comment by U.S. EPA, the Respondents shall prepare a final Technical Memorandum and Phased RI/FS Planning Documents which fully and satisfactorily address each of U.S. EPA's comments on the draft Technical Memorandum and Phased RI/FS Planning Documents. The final Technical Memorandum and Phased RI/FS Planning Documents shall include a response to comments explaining how each of U.S. EPA's comments on the draft Technical Memorandum and Phased RI/FS Planning Documents was addressed in the final Technical Memorandum and Phased RI/FS Planning Documents. The Respondents shall submit the final Technical Memorandum and Phased RI/FS Planning Documents to U.S. EPA and Ohio EPA within 21 calendar days of the receipt of U.S. EPA's comments on the draft Technical Memorandum and Phased RI/FS Planning Documents. The Respondents shall submit any subsequent revisions to the Technical Memorandum and/or any of the Phased RI/FS Planning Documents, if required, to U.S. EPA and Ohio EPA within 15 calendar days of the receipt of U.S. EPA's comments on the Technical Memorandum and/or final Phased RI/FS Planning Documents. The Respondents shall not make any changes to the Technical Memorandum or Phased RI/FS Planning Documents that are not a direct result of addressing agency comments. The Respondents shall identify all revisions to the Technical Memorandum and Phased RI/FS Planning Documents in the response to comments.

If the Respondents require additional time to respond to U.S. EPA's comments on the Technical Memorandum or Phased RI/FS Planning Documents, the Respondents shall provide U.S. EPA with a written request to extend the submission schedule for the Technical Memorandum and/or Phased RI/FS Planning Documents or for specific Phased RI/FS Planning Documents. The Respondents' request shall discuss the specific causes of the delay, as well as the actions the Respondents are taking and plan to take to address the issues causing the delay. Based on the supporting information provided in the request U.S. EPA may grant up to a 30-day extension in the submission schedule.

1.3.2 *Sampling and Analysis Plan* (RI/FS Guidance Section 2.3.2)

The Respondents shall prepare a Sampling and Analysis Plan (SAP) to ensure that sample collection and analytical activities are conducted in accordance with technically acceptable protocols and that the data meet the Site-specific DQOs. The SAP provides a mechanism for planning field activities and consists of a Field Sampling Plan (FSP) (Task 1.3.2.1) and a Quality Assurance Project Plan (QAPP) (Task 1.3.2.2). The FSP and the QAPP may be submitted as separate documents.

All sampling and analyses performed shall conform to U.S. EPA direction, approval, and guidance regarding sampling, quality assurance/quality control (QA/QC), data validation, and chain of custody procedures. The Respondents shall ensure that the laboratory used to perform the analyses participates in a QA/QC program that complies with U.S. EPA guidance.

Upon request by U.S. EPA, the Respondents shall have such a laboratory analyze samples submitted by U.S. EPA for quality assurance monitoring. The Respondents shall provide U.S. EPA the QA/QC procedures followed by all sampling teams and laboratories performing data collection and/or analysis. The Respondents shall also ensure the provision of analytical tracking information consistent with OSWER Directive No. 9240.0-2B, *Extending the Tracking of Analytical Services to PRP-Lead Superfund Sites.*

Upon request by U.S. EPA, the Respondents shall allow U.S. EPA or its authorized representatives to take split and/or duplicate samples of any samples collected by the Respondents or their contractors or agents. The Respondents shall notify U.S. EPA not less than 10 business days in advance of any sample collection activity. U.S. EPA shall have the right to take any additional samples that it deems necessary.

1.3.2.1 Field Sampling Plan (RI/FS Guidance Section 2.3.2.3 and Appendix B)

For each investigation and data collection activity identified in Task 1.2.1 *(Identify Data Needs and Design a Data Collection Program*) and any additional data collection activities identified in Task 1.2 (*Project Planning*), the RI/FS Work Plan or during the course of the RI/FS, the Respondents shall submit a FSP that defines in detail the sampling and data-gathering methods that the Respondents shall use to collect the data. The FSP shall discuss how the specific tasks the Respondents shall perform shall meet the detailed Site-specific objectives of the RI/FS; the detailed objectives of each investigation (e.g., Tasks 1.2.1.1 to 1.2.1.9); and the DQOs.

For each investigation (e.g., waste characterization, etc.), the FSP shall present a statement of the problems and the potential problems posed by the Site; discuss previous sampling locations, analytical results and other relevant information (e.g., visual observations, historical records, air photo analyses); discuss the detailed objectives of each investigation, including the DQOs; and discuss and explain in detail

how the specific work and activities the Respondents shall perform as part of each investigation will meet the objectives of the investigation and be used in the remedial investigation, the human health and ecological risk assessments and the feasibility study.

For each investigation, the FSP shall include a detailed description of the sampling objectives; sample locations, depths and frequency; sampling equipment and procedures; field measurements, analyses and procedures; sample preservation and handling; the field notes that the Respondents shall collect; field quality assurance; planned analyses; standard operating procedures; and decontamination procedures. The FSP shall include step-by-step instructions and be written so that a field sampling team unfamiliar with the Site would be able to gather the samples and the required field information according to the approved protocols. The FSP shall explain and justify why specific equipment and sampling procedures were selected and how they are appropriate for the work being performed and the objectives of this investigation. The FSP shall also include one or more figures that show all previous sampling locations with notes for any significant findings including groundwater elevation contours and the planned RI sample locations on the same map. The FSP shall also include a schedule which identifies the timing for the initiation and completion of all tasks the Respondents shall complete as a part of the FSP. If the Respondents plan to collect data from existing monitoring wells, they must collect additional data and/or demonstrate to U.S. EPA's satisfaction that the wells are appropriately located and screened to meet the sampling objectives (e.g., most existing wells are screened 5 to 10 or more feet below the water table; vertical contaminant profiling not conducted).

1.3.2.2 Quality Assurance Project Plan (QAPP)

The Respondents shall prepare a Site-specific QAPP covering sample analysis and data handling for the samples and data collected during the RI. The Respondents shall prepare the QAPP in accordance with the *Region 5 Instructions on the Preparation of a Superfund Division Quality Assurance Project Plan Based on EPA QA/R-5* (Revision 0, June 2000); *EPA Requirements for Quality Assurance Project Plans (QA/R-5)* (EPA/240/B-01/003, March 2001); and *EPA Guidance for Quality Assurance Project Plans (QA/G-5)* (EPA/600/R-98/018, February 1998). The QAPP shall describe the project objectives and organization, functional activities, and quality assurance and quality control (QA/QC) protocols the Respondents shall use to achieve the desired DQOs. The DQOs shall at a minimum reflect use of analytic methods to identify contamination and remediate contamination consistent with the levels for remedial action objectives identified in the National Contingency Plan, 40 C.F.R. Part 300. In addition, the QAPP shall address sampling procedures, sample custody, analytical procedures, and data reduction, validation, reporting and personnel qualifications. The Respondents shall also ensure the provision of analytical tracking information consistent with U.S. EPA's Office of Solid Waste and Emergency Response (OSWER) Directive No. 9240.0-2B *Extending the Tracking of Analytical Services to PRP-Lead*

Superfund Sites. Field personnel shall be available for U.S. EPA QA/QC training and orientation where applicable.

The Respondents shall demonstrate, in advance, to U.S. EPA's satisfaction, that each laboratory they may use is qualified to conduct the proposed work. This includes the use of methods and analytical protocols for the chemicals of concern in the media of interest within detection and quantification limits consistent with both QA/QC procedures and the DQOs in the U.S. EPA-approved QAPP for the Site. The laboratory must have and must follow an approved QA program.

If the Respondents select a laboratory that is not in the Contract Laboratory Program (CLP), the laboratory must use methods consistent with the CLP methods that would be used at this Site for the purposes proposed and the QA/QC procedures approved by U.S. EPA. Each laboratory and contractor who performs work involving environmental data operation activities for the Respondents under this ASAOC shall submit a Quality Management Plan (QMP) to U.S. EPA and Ohio EPA for review and to U.S. EPA for approval. The contractors' QMPs shall provide information on how the contractor's management will plan, implement, and assess its Quality System that complies with ANSI/ASQC E4-1994, *Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs.* The Respondents shall prepare the QMPs according to *EPA Requirements for Quality Management Plans*, EPA QA/R-2, March 2001, or equivalent documentation. The Respondents may submit the QMPs as part of the QAPP or as separate documents. U.S. EPA may also require the Respondents to submit detailed information to demonstrate that a laboratory is qualified to conduct the work, including information on personnel qualifications, equipment and material specifications. The Respondents shall provide assurances that U.S. EPA and Ohio EPA have access to laboratory personnel, equipment and records for sample collection, transportation and analysis. Upon request by U.S. EPA, the Respondents shall allow U.S. EPA or its authorized representatives to take split and/or duplicate samples of any samples collected by Respondents or their contractors or agents.

The Respondents shall participate in a pre-QAPP meeting or conference call with U.S. EPA. The purpose of this meeting or conference call is to discuss the QAPP requirements and to obtain any clarification needed to prepare the QAPP.

1.3.3 *Health and Safety Plan* (RI/FS Guidance Section 2.3.3 and Appendix B)

The Respondents shall prepare a Health and Safety Plan that conforms to their health and safety program and complies with the Occupational Safety and Health Administration (OSHA) regulations and protocols outlined in Title 29 of the Code of Federal Regulations (CFR), Part 1910. The Health and Safety Plan shall include the 11 elements described in the RI/FS Guidance such as a health and safety risk analysis, a description of monitoring and personal protective equipment, medical monitoring, and Site control. U.S. EPA does not "approve" the Respondent's Health and Safety Plan,

but rather U.S. EPA reviews it to ensure that all the necessary elements are included, and that the plan provides for the protection of human health and the environment, and after that review provides comments as may be necessary and appropriate. The safety plan must, at a minimum, follow the U.S. EPA's guidance document *Standard Operating Safety Guides* (Publication 9285.1-03, PB92-963414, June 1992).

TASK 2: COMMUNITY RELATIONS

U.S. EPA has the responsibility of developing and implementing community relations activities for the Site. The critical community relations planning steps performed by U.S. EPA and Ohio EPA include conducting community interviews and developing a Community Relations Plan. Although implementing the Community Relations Plan is the responsibility of U.S. EPA, the Respondents may assist by providing information regarding the Site's history; participating in public meetings; assisting in preparing fact sheets for distribution to the general public; or conducting other activities approved by U.S. EPA. All PRP-conducted community relations activities shall be planned and developed in coordination with U.S. EPA.

TASK 3: SITE CHARACTERIZATION AND RISK ASSESSMENT (RI/FS Guidance Chapter 3)

This task includes conducting site characterization and investigation activities (Task 3.1); the baseline human health risk assessment (Task 3.2) and the baseline ecological risk assessment (Task 3.3).

3.1 Site Characterization

The Respondents shall conduct the site characterization activities according to the U.S. EPA-approved RI/FS Work Plan, FSP and QAPP, and shall include the investigations and data collection activities identified in Task 1.2.1 *(Identify Data Needs and Design a Data Collection Program*), Task 1.2 (*Project Planning*); the RI/FS Work Plan; or during the course of the RI/FS. The Respondents shall document all field work and observations in detailed field logs and/or standard format information sheets (see Section 3.5.1 of the RI/FS Guidance for examples of the types of information that the Respondents must record). The Respondents must specify, in the RI Work Plan, the FSP and/or the QAPP, along with a description of the Respondents' sample management and tracking procedures, the methods of documentation and the types of information that the Respondents shall record. The Respondents shall coordinate field activities with U.S. EPA's Remedial Project Manager (RPM) at least 10 business days prior to any field mobilization and throughout the field activities.

The Respondents shall communicate the progress of the field activities to the RPM in the monthly progress reports (Task 8). The monthly progress reports shall summarize the field activities conducted each month including, but not limited to, drilling and sample locations, depths and descriptions; boring logs; sample collection logs; field

notes; problems encountered; solutions to problems; a description of any modifications to the procedures outlined in the RI/FS Work Plan, the FSP, the QAPP or the Health and Safety Plan with justifications for the modifications; a summary of all data received during the reporting period and the analytical results; and upcoming field activities. In addition, the Respondents shall provide the RPM or the entity designated by the RPM with all laboratory data within the monthly progress reports and in no event later than 90 days after samples are shipped for analysis.

Within 30 days of U.S. EPA's approval or conditional approval of the Technical Memorandum for the final phase of field work (Task 1.3.1.1), the Respondents shall submit a Site Characterization Technical Memorandum that addresses all of the Site and nearby areas. The Site Characterization Technical Memorandum shall be consistent with the ASAOC and this SOW. The Respondents shall address U.S. EPA's comments on the Site Characterization Technical Memorandum when the Respondents prepare the RI Report (Task 4). The Respondents shall complete a Site Characterization Technical Memorandum that addresses, but is not limited to, the elements listed below.

1. Introduction

   - Purpose of Report
   - Site Description and Background
     - Site Location and Physical Setting Including General Geology, Hydrology, Hydrogeology, Surrounding Land Use and Populations, Groundwater Use, Surface Water Bodies, Ecological Areas including Sensitive Ecosystems and Meteorology/Climatology
     - Past and Present Facility Operations/Site Usage and Disposal Practices, Including Waste Disposal/Operations Areas Based on Historical Air Photos
     - Previous Investigations and Results
   - Report Organization

2. Study Area Investigations, Procedures and Methodologies, Including a Detailed Description of All Field Activities Associated with Site Characterization and Any Deviations from Approved Planning Documents (i.e., Describe How the RI Was Conducted)

   - Detailed Sampling and Data Gathering Objectives; Data Gaps and Data Needs Identified During Project Scoping and Course of RI
   - Surface Features Inventory, Including Topographic Mapping, etc.
   - Surrounding Land Use and Population Inventories/Surveys

- Meteorology/Climate Data Collection
- Presumptive Remedy Area for Direct Contact Risk Delineation and Delineation of any other Presumptive Remedy Areas
- Waste Characterization Activities
- Surface and Subsurface Soils Investigations
- Leachate Investigations
- Hydrogeologic Investigations and Groundwater Use Inventories
- Surface Water, Sediment and Floodplain Investigations
- Landfill/Soil Gas and Air Investigations
- Ecological Investigations
- Treatability Studies (if treatability studies are needed - Task 1.2.1.9)

3. Physical Characteristics of the Study Area, Analytical Results and Modeling

   - Surface Features (Natural and Manmade) and Topography
   - Surrounding Land Use and Populations
   - Meteorology/Climate
   - Geology, Contaminant Source Areas, Presumptive Remedy Area(s), Waste Characterizations, Surface and Subsurface Soils, Hot Spots, Leachate, Analytical Data
   - Hydrogeology, Groundwater Conditions, Analytical Data, Contaminant Trends
   - Surface Water Hydrology and Surface Water, Sediment and Floodplain Characterizations, Analytical Data
   - Landfill/Soil Gas and Air Characterization, Analytical Data
   - Ecological Characterization and Sensitive Ecosystems

4. Summary of the Nature and Extent of Contamination, Contaminant Fate and Transport and Modeling Results

   - Contaminant Source/Waste Areas, Surface and Subsurface Soil Contamination, Hot Spots and Leachate

     – Contaminant Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Contaminant Fate and Transport Processes; Migration to Other Areas and Media; Modeling (if modeling is required by RI/FS Planning Documents or is otherwise conducted); Detected and Modeled (if modeling is required by RI/FS Planning Documents or is otherwise conducted) Concentrations in Other Areas and Media.

- Groundwater Contaminants

  - Contaminant Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Groundwater Use; Fate and Transport Processes; Migration to Other Areas and Media; Modeling (if modeling is required by RI/FS Planning Documents or is otherwise conducted); Detected and Modeled (if modeling is required by RI/FS Planning Documents or is otherwise conducted); Concentrations in Other Areas and Media.

- Surface Water and Sediments

  - Contaminants and Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Contaminant Fate and Transport Processes; Migration to Other Areas and Media; Modeling (if modeling is required by RI/FS Planning Documents or is otherwise conducted); Detected and Modeled (if modeling is required by RI/FS Planning Documents or is otherwise conducted); Concentrations in Other Areas and Media.

- Landfill/Soil Gas and Air

  - Contaminants and Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Contaminant Fate and Transport; Buildings/Land Use; Migration to Other Areas and Media; Modeling (if modeling is required by RI/FS Planning Documents or is otherwise conducted); Detected and Modeled (if modeling is required by RI/FS Planning Documents or is otherwise conducted) Concentrations in Other Areas and Media

- Geotechnical Investigation

  - Soil Physical Properties; Slope Analyses, Bearing Capacity; and Cap Design Considerations.

5. Summary and Conclusions

   - Summary

     - Nature and Extent of Contamination
     - Fate and Transport

- Conclusions
  - Data Limitations and Recommendations for Future Work

6. References

7. Tables and Figures
   (at least one set of figures shall be no larger than 11" x 17")

8. Appendices

- Log Books
- Soil Boring Logs
- Test Pit/Trenching Logs
- Landfill/Soil Gas Probe Construction Diagrams
- Direct Soil Solute Sampling Construction Diagrams
- Monitoring Well Construction Diagrams
- Sample Collection Logs
- Private and Public Well Records
- Analytical Data and Data Validation Reports
- Detailed Modeling Reports (if modeling is required by RI/FS Planning Documents or is otherwise conducted)

3.2 Human Health Risk Assessment

The Respondents shall conduct a health risk assessment that focuses on current and potential future risks to persons coming into contact with Site-related hazardous substances or contaminants, as well as risks to nearby residential, recreational and industrial worker populations from exposure to hazardous substances or contaminants in groundwater, soils, sediments, surface water, landfill gas and soil vapors, air, and the ingestion of contaminated organisms in nearby impacted ecosystems. The human health risk assessment shall define central tendency and reasonable maximum estimates of exposure for current land use conditions and reasonable future land use conditions. When evaluating reasonable future land use scenarios, the human health risk assessment shall give consideration to any permanent legally enforceable and binding land use restrictions that pass with the chain of title on any Site properties. The human health risk assessment shall use data from the Site and nearby areas to identify the contaminants of concern (COCs), provide an estimate of how and to what extent human receptors might be exposed to these COCs currently and in the future (e.g., based on fate and transport modeling and/or changes in land or groundwater use), and provide an assessment of the health effects associated with these COCs. The human health risk assessment shall project the potential risk of health problems occurring if no cleanup action is taken at the Site and/or nearby areas; identify areas and/or media where risks exceed a cancer risk or 1E-6 and/or a hazard index of 1; and establish preliminary remediation goals for the COCs (carcinogenic and non-carcinogenic).

The Respondents shall conduct the human health risk assessment in accordance with U.S. EPA guidance including, at a minimum: *Risk Assessment Guidance for Superfund (RAGS), Volume I - Human Health Evaluation Manual (Part A)*, Interim Final (EPA-540-1-89-002, OSWER Directive 9285.7-01A, December 1, 1989); and *Risk Assessment Guidance for Superfund (RAGS), Volume I - Human Health Evaluation Manual (Part D, Standardized Planning, Reporting, and Review of Superfund Risk Assessments)* Final (EPA 540-R-97-033, OSWER 9285.7-01D, December 2001).

Consistent with the Presumptive Remedy Guidance, the human health risk assessment shall include the streamlined risk assessment for direct contact with the landfill contents presented in this SOW to document the unacceptable risks posed by direct contact with the landfill materials in the Presumptive Remedy Area. Consistent with the Presumptive Remedy Guidance and other U.S. EPA guidance, the Respondents may also conduct a streamlined human health risk assessment for other Site areas and/or media for which available data indicate that contaminant levels are clearly above applicable or relevant and appropriate requirements and/or U.S. EPA's acceptable level of risk, and that remedial action is clearly warranted and a Presumptive Remedy approach is appropriate. The Respondents shall conduct a conventional human health risk assessment consistent with the requirements of this SOW for all Site areas and/or media where the Respondents have not clearly indicated that there is a basis for remedial action and that a Presumptive Remedy approach is appropriate.

The Respondents shall present and submit the results of the human health risk assessment in a draft Human Health Risk Assessment Report sent to Ohio EPA and U.S. EPA for review with the draft RI Report (60 calender days after receipt of U.S. EPA's comments on the Site Characterization Technical Memorandum - see Task 4). The Human Health Risk Assessment Report shall also include the information that U.S. EPA will need to prepare the relevant sections of the Record of Decision (ROD) for the Site [see Chapters 6 and 9 of U.S. EPA's *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Documents (*EPA 540-R-98-031, July 1999) for the information that is needed). The Human Health Risk Assessment Report may be submitted as a separate document from the RI Report, although the Respondents must summarize the results and the conclusions of the human health risk assessment in the RI Report. Following comment by U.S. EPA, the Respondents shall prepare a final Human Health Risk Assessment Report which fully and satisfactorily addresses each of U.S. EPA's comments on the draft Human Health Risk Assessment Report. The final Human Health Risk Assessment Report submittal shall include a response to comments explaining how each of U.S. EPA's comments on the draft Human Health Risk Assessment Report was addressed in the final Human Health Risk Assessment Report. The Respondents shall submit the final Human Health Risk Assessment Report to Ohio EPA for review and to U.S. EPA for review and approval within 30 calendar days of the receipt of U.S. EPA's comments on the draft Human Health Risk Assessment Report. The Respondents shall submit any subsequent revisions to the Human Health Risk Assessment Report, if any are required, to Ohio EPA for review and to U.S. EPA for review and approval within 21

calendar days of the receipt of U.S. EPA's comments on the final Human Health Risk Assessment Report. If the Respondents require additional time to respond to U.S. EPA's comments on the Human Health Risk Assessment, the Respondents shall provide U.S. EPA with a written request to extend the submission schedule. The Respondents' request shall discuss the specific causes of the delay, as well as the actions the Respondents are taking and plan to take to address the issues causing the delay. Based on the supporting information provided in the request U.S. EPA may grant up to a 30-day extension in the submission schedule.

The Respondents shall not make any changes to the Human Health Risk Assessment Report that are not a direct result of addressing agency comments. The Respondents shall identify all revisions to the Human Health Risk Assessment Report in the response to comments.

3.3 Ecological Risk Assessment

The Respondents shall conduct an ecological risk assessment in accordance with U.S. EPA guidance including, at a minimum: *Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments* (EPA-540-R-97-006, June 1997, OSWER Directive 9285.7-25). The ecological risk assessment shall describe the data collection activities conducted as part of Task 1.2.1.7 and the information listed below. In addition, the ecological risk assessment shall evaluate both current and potential future risks to ecosystems impacted and potentially impacted by the Site. The Respondents shall present the results of the ecological risk assessment in a draft Ecological Risk Assessment Report and submit the results with the draft RI Report (60 calendar days after receipt of U.S. EPA's comments on the Site Characterization Technical Memorandum - see Task 4). The Ecological Risk Assessment Report shall also include the information that U.S. EPA will need to prepare the relevant sections of the Record of Decision (ROD) for the Site [see Chapters 6 and 9 of U.S. EPA's *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Documents* (EPA 540-R-98-031, July 1999) for the information that is needed]. The Ecological Risk Assessment Report may be submitted as a separate document from the RI Report, although the results and the conclusions of the ecological risk assessment shall be summarized in the RI Report. Following comment by U.S. EPA, the Respondents shall prepare a final Ecological Risk Assessment Report which fully and satisfactorily addresses each of U.S. EPA's comments on the draft Ecological Risk Assessment Report. The final Ecological Risk Assessment Report submittal shall include a response to comments explaining how each of U.S. EPA's comments on the draft Ecological Risk Assessment Report was addressed in the final Ecological Risk Assessment Report. The Respondents shall submit the final Ecological Risk Assessment Report to Ohio EPA for review and to U.S. EPA for review and approval within 30 calendar days of the receipt of U.S. EPA's comments on the draft Ecological Risk Assessment Report. The Respondents shall submit any subsequent revisions to the Ecological Risk Assessment Report, if any are required, to Ohio EPA for review and to U.S. EPA for review and approval within 21

calendar days of the receipt of U.S. EPA's comments on the final Ecological Risk Assessment Report. If the Respondents require additional time to respond to U.S. EPA's comments on the Ecological Risk Assessment, the Respondents shall provide U.S. EPA with a written request to extend the submission schedule. The Respondents' request shall discuss the specific causes of the delay, as well as the actions the Respondents are taking and plan to take to address the issues causing the delay. Based on the supporting information provided in the request U.S. EPA may grant up to a 30-day extension in the submission schedule.

The Respondents shall not make any changes to the Ecological Risk Assessment Report that are not a direct result of addressing agency comments. All revisions to the Ecological Risk Assessment Report shall be identified in the response to comments.

The Respondents shall submit draft and final Ecological Risk Assessment Reports that fully address, but are not limited to, the following elements:

- Project Scoping, Planning and Study Objectives
- Conceptual Model and Assessment Endpoints
- Chemicals of Concern, Sources of Data and the Analytical Procedures Used
- Stressor-Response and Exposure Profiles
- Risks to Assessment Endpoints, Including Risk Estimates and Adversity Evaluations
- Review and Summary of Major Areas of Uncertainty (As Well As the Direction) and the Approaches Used to Address Them
    - Degree of Scientific Consensus In Key Areas of Certainty
    - Major Data Gaps and Whether Gathering Additional Data Would Add Significantly to Overall Confidence in Assessment Results
    - Science Policy Judgements or Default Assumptions Used to Bridge Information Gaps and the Basis for these Assumptions
    - Elements of Quantitative Uncertainty Analysis Embedded in Risk Estimate

TASK 4: REMEDIAL INVESTIGATION (RI) REPORT

Within 60 calendar days following receipt of U.S. EPA's comments on the Site Characterization Technical Memorandum (Task 3.1), the Respondents shall submit a draft RI Report that addresses all of the Site and nearby areas. The RI Report shall either include or summarize the Human Health Risk Assessment Report and the Ecological Risk Assessment Report, and shall be consistent with the ASAOC and this SOW. The RI Report shall fully and satisfactorily address and incorporate U.S. EPA's comments on the Site Characterization Technical Memorandum. The RI Report submittal shall include a response to comments that details how each of U.S. EPA's comments on the Site Characterization Technical Memorandum was addressed in the RI Report. The Respondents shall submit a RI Report that addresses, but is not limited to, the elements listed below. In addition, the RI Report shall also include the

information that U.S. EPA will need to prepare the Record of Decision (ROD) for the Site [see Chapters 6 and 9 of U.S. EPA's *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Documents* (EPA 540-R-98-031, July 1999) for the information that is needed]. Following comment by U.S. EPA, the Respondents shall prepare a final RI Report which fully and satisfactorily addresses each of U.S. EPA's comments on the draft RI Report. The final RI Report submittal shall include a response to comments explaining how each of U.S. EPA's comments on the draft RI Report was addressed in the final RI Report. The Respondents shall submit the final RI Report to Ohio EPA for review and to U.S. EPA for review and approval within 30 calendar days of the receipt of U.S. EPA's comments on the draft RI Report. The Respondents shall submit any subsequent revisions to the RI Report, if any are required, to Ohio EPA for review and to U.S. EPA for review and approval within 21 calendar days of the receipt of U.S. EPA's comments on the final RI Report. If the Respondents require additional time to respond to U.S. EPA's comments on the RI Report, the Respondents shall provide U.S. EPA with a written request to extend the submission schedule. The Respondents' request shall discuss the specific causes of the delay, as well as the actions the Respondents are taking and plan to take to address the issues causing the delay. Based on the supporting information provided in the request U.S. EPA may grant up to a 30-day extension in the submission schedule.

The Respondents shall not make any changes to the RI Report that are not a direct result of addressing agency comments. The Respondents shall identify all revisions to the RI Report in the response to comments. The draft and final RI Reports shall fully address, but are not limited to, the following elements:

1. Executive Summary

2. Introduction

   - Purpose of Report
   - Site Description and Background
   - Site Location and Physical Setting Including General Geology, Hydrology, Hydrogeology, Surrounding Land Use and Populations, Groundwater Use, Surface Water Bodies, Ecological Areas including Sensitive Ecosystems and Meteorology/Climatology
   - Past and Present Facility Operations/Site Usage and Disposal Practices, Including Waste Disposal/Operations Areas Based on Historical Air Photos
   - Previous Investigations and Results
   - Report Organization

3. Study Area Investigations, Procedures and Methodologies, Including a Detailed Description of All Field Activities Associated with Site Characterization and Any Deviations from Approved Planning Documents (i.e., Describe How the RI Was Conducted)

- Detailed Sampling and Data Gathering Objectives; Data Gaps and Data Needs Identified During Project Scoping and Course of RI
- Surface Features Inventory, Including Topographic Mapping, etc.
- Surrounding Land Use and Population Inventories/Surveys
- Meteorology/Climate Data Collection
- Presumptive Remedy Area for Direct Contact Risk Delineation and Delineation of any other Presumptive Remedy Areas
- Waste Characterization Activities
- Surface and Subsurface Soils Investigations
- Leachate Investigation
- Hydrogeologic Investigations and Groundwater Use Inventories
- Surface Water, Sediment and Floodplain Investigations
- Landfill/Soil Gas and Air Investigations
- Ecological Investigations
- Treatability Studies (if treatability studies are needed - Task 1.2.1.9)
- Geotechnical Investigation

4. Physical Characteristics of the Study Area, Analytical Results and Modeling

- Surface Features (Natural and Manmade) and Topography
- Surrounding Land Use and Populations
- Meteorology/Climate
- Geology, Contaminant Source Areas, Presumptive Remedy Area for Direct Contact Risk and any other Presumptive Remedy Areas, Waste Characterizations, Surface and Subsurface Soils, Hot Spots, Leachate, Analytical Data
- Hydrogeology, Groundwater Conditions, Analytical Data, Contaminant Trends
- Surface Water Hydrology and Surface Water, Sediment and Floodplain Characterizations, Analytical Data
- Landfill/Soil Gas and Air Characterization, Analytical Data
- Ecological Characterization and Sensitive Ecosystems
- Summary of the Nature and Extent of Contamination, Contaminant Fate and Transport and Modeling Results (if modeling is required in RI/FS Planning Documents or is otherwise conducted)
- Contaminant Source/Waste Areas, Surface and Subsurface Soil Contamination, Hot Spots and Leachate

  - Contaminant Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Contaminant Fate and Transport Processes; Migration to Other Areas and Media; Modeling (if modeling is required in RI/FS Planning Documents or is otherwise conducted); Detected and

Modeled (if modeling is required in RI/FS Planning Documents or is otherwise conducted) Concentrations in Other Areas and Media.

- Groundwater Contaminants
  - Contaminant Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Groundwater Use; Fate and Transport Processes; Migration to Other Areas and Media; Modeling (if modeling is required in RI/FS Planning Documents or is otherwise conducted); Detected and Modeled (if modeling is required in RI/FS Planning Documents or is otherwise conducted) Concentrations in Other Areas and Media.
- Surface Water and Sediments
  - Contaminants and Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Contaminant Fate and Transport Processes; Migration to Other Areas and Media; Modeling (if modeling is required in RI/FS Planning Documents or is otherwise conducted); Detected and Modeled (if modeling is required in RI/FS Planning Documents or is otherwise conducted) Concentrations in Other Areas and Media.
- Landfill/Soil Gas and Air
  - Contaminants and Concentrations; Quantity, Volume, Size and/or Magnitude of Contamination; Potential Routes of Migration; Physical and Chemical Attributes and Contaminant Persistence; Contaminant Fate and Transport; Buildings/Land Use; Migration to Other Areas and Media; Modeling (if modeling is required in RI/FS Planning Documents or is otherwise conducted); Detected and Modeled (if modeling is required in RI/FS Planning Documents or is otherwise conducted) Concentrations in Other Areas and Media.

5. Human Health Risk Assessment Summary

6. Ecological Risk Assessment Summary

7. Summary and Conclusions
   - Summary
     - Nature and Extent of Contamination